Teacher support and student motivation to learn with Artificial Intelligence (AI) based chatbot

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Abstract

ABSTRACT As Artificial Intelligence (AI) advances technologically, it will inevitably bring many changes to classroom practices. However, research on AI in education reflects a weak connection to pedagogical perspectives or instructional approaches, particularly in K-12 education. AI technologies may benefit motivated and advanced students. Understanding the teacher's role of student motivation in mediating and supporting learning with AI technologies in the classroom is needed. This study used self-determination theory as the undergirding framework to investigate how teacher support moderates the effects of student expertise on needs satisfactions and intrinsic motivation to learn with AI technologies. This experimental study involved 123 Grade 10 students, and used chatbots as AI-based technologies in the experiment. The analyses revealed that intrinsic motivation and competence to learn with the chatbot depended on both teacher support and student expertise (i.e. self-regulated learning and digital literacy), and the teacher support better satisfied the need for relatedness, and it less satisfied the need for autonomy. The findings refined our understanding about the application of self-determination theory and expand the pedagogical and design considerations of AI application and instructional practices.